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HOW TO REACH
EPINORTH

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Janet Hopkins, Managing Editor, EpiNorth, Department of Health and Social Services

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Continued from page 1

Results and Interpretation:

Over the five year review period, 840 LRTI admissions were identified in 544 individual patients. The main criteria for admission were oxygen requirement and concerns about hydration and feeding or potential respiratory failure. The discharge diagnosis was bronchiolitis in 69% of admissions, with most of the remainder being pneumonia (19%) or respiratory tract infection (9%). The median length of stay was four days.

Fifty-nine percent of patients were male and 64% of admissions occurred in the first six months of life. Only 15% of admitted infants were born before 37 weeks gestation and 9% were low birth weight (less than 2,500g), with the majority being healthy, term infants with no underlying risk factors or other health problems. Only 21% of the patients were breast fed at the time of admission. Each year, a peak in hospital admissions occurred during the period of maximum RSV activity in the region (Figure 1).

The data was further analyzed to calculate hospital admission rates per thousand births (with confidence intervals) by health region (Table 1). Of note is the exceptionally high rate of admission for the Kitikmeot region with 590 admissions per 1000 births. This translates into six hospital admissions during the first year of life for every 10 babies born in the Kitikmeot region. Of the non-Inuit communities, the Tlicho region has the highest rate of admission at 371 per 1000 births.

It is notable that the rates of LRTI admission to hospital for all health regions of the NWT and Kitikmeot were generally higher than the overall Canadian rate.[3] Inuit infants represented nearly two-thirds of the total admissions and similar proportion of PICU transfers though this group accounts for less than one-fifth of the total population of the region. The admission rates for the Kitikmeot region were 10 times higher than the overall Canadian rates and are by far the highest rates reported in the literature.

Historically, many infants admitted to hospital for bronchiolitis have one or more risk factors for severe respiratory disease.[9] This study from the Northwest Territories and Kitikmeot Region found that the vast majority of northern infants admitted to hospital were healthy, term, non-breastfed infants with no underlying disease.

The dramatically high rate of admission for the Kitikmeot region is difficult to explain, though reasonably consistent across the five years of the review and is comparable to rates reported in previous reports from northern Canada.[1,6] Previous studies that examined rates of RSV infection noted that virtually all children had been infected with RSV at least once by 24 months of age[10]. Of those infected infants, 25-40% will be symptomatic with 0.5 to 2% requiring hospital admission[11]. The difference in this population does not appear to be the rate of infection with RSV or other respiratory pathogens but rather the high rate of hospital admission as a result. It seems unlikely that such dramatically elevated rates of hospital admission could be explained solely on the basis of environmental factors though it is likely that social and economic factors play a role. With the entire population reviewed living in remote northern communities, it is striking that the Inuit infants had such significantly elevated rates of hospital admission compared to all other groups in the region. High rates of hospital admission have been reported in Inuit infants from other regions [1,5,6,7] but without the benefit of comparison populations. This study raises the question as to whether there could be a genetic predisposition to more severe disease in Inuit infants.

This study has several limitations. The retrospective study design limited the ability to quantify household and environmental factors contributing to the severity of illness and risk for hospitalization. The study was based on hospitalization of infants as an outcome rather than total disease incidence in the population at risk, and is therefore an underestimate of the total burden of LRTI on the communities and the health care system.

Future studies should analyze risk factors for LRTI hospitalizations in northern infants. The role of public health campaigns that stress the importance of a non-smoking environment, handwashing in the home and of ongoing breastfeeding needs to be established.

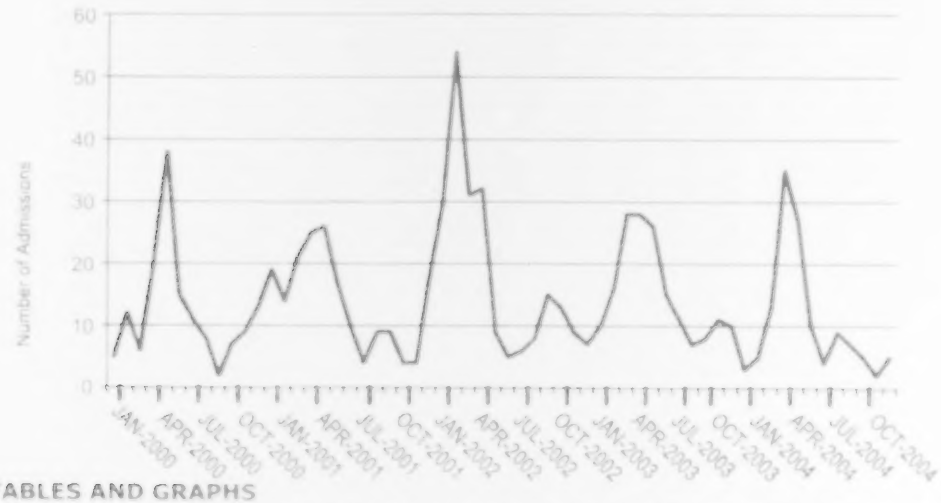
Key Points:

Hospital admission rates for respiratory illness in infants were high in all regions within the NWT and Kitikmeot region.

Inuit infants from the Kitikmeot region had a hospital admission rate ten times higher than the overall Canadian population.

The majority of Northern infants admitted to hospital had no underlying risk factors and were healthy term infants.

The observations in this study suggest that breastfeeding has a protective effect in preventing hospitalization for respiratory illness in infants.



TABLES AND GRAPHS

Figure 1: Monthly Infant Admissions for Acute Respiratory Illness in Northwest Territories from 2000-2004

Table 1: Infant Admission Rates for LRTI per 1,000 live birth by Health Region for the years 2000-2004

Region	Admissions per 1,000 live births	Lower Confidence Interval	Upper Confidence Interval
Hay River/Ft. Smith	63	41	93
Yellowknife	68	56	83
Dehcho	97	63	144
Beaufort Delta	185	155	219
Sahtu	218	163	284
Kitikmeot Region	590	552	627

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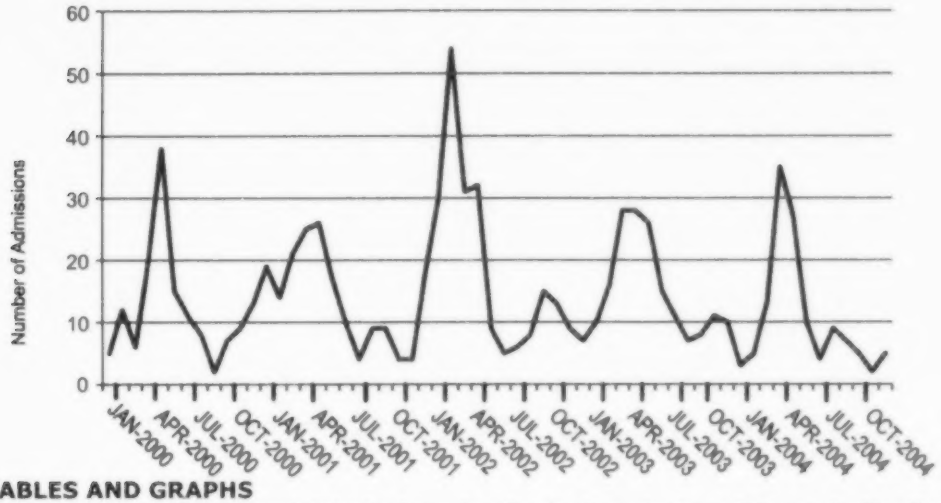

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A more complete version of this study was previously published in Pediatrics and Child Health.

Acknowledgement:
The authors would like to thank Dr. Joan Robinson, Department of Paediatrics, University of Alberta for her editorial assistance.

Disclosure:
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Ethical Review:
This study was reviewed and approved by the ethics committee of the Stanton Territorial Health Authority.

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BREASTFEEDING IN THE NWT 2004 - 2007

Negaar Nadji, Biology Student, University of Victoria

Tanya Cockburn, Dietetic Intern University of Saskatchewan

Participants of 2007 Quintessence Breastfeeding Challenge at the Legislative Assembly

Breastfeeding is recognized the world over as the gold standard for infant nutrition, providing optimal health, immunological and emotional benefits for growth and development throughout the lifecycle. According to UNICEF, if every child were exclusively breastfed from birth on, an estimated 1.5 million lives would be saved.[1] The World Health Organization and UNICEF recommend exclusive breastfeeding for the first six months in order to maximize the benefits of breastfeeding.[2]

Nationally, over the last few years, breastfeeding rates have been inconsistent.[3] Rates of breastfeeding have started to increase due to concerns not only for health, but also for conservation and ecology, greater scrutiny of the artificial feeding industry, scientific advances in knowledge about breast milk and enhanced promotion by health care professionals.

The NWT, as a member of the Breastfeeding Committee of Canada (BCC), has a goal of increasing breastfeeding initiation and duration rates through education, promotion and support of mothers and health care professionals. This article provides an update of breastfeeding benefits, promotion activities, breastfeeding rates and other updates since 2004.[3]

Emerging Breastfeeding Benefits

The complexities of human breast milk continue to be the subject of research and new benefits continue to emerge. Breast milk contains long-chain polyunsaturated fatty acids that are essential for neuronal development (adults are capable of synthesizing fatty acids, but infants are not).[4] These polyunsaturated fatty acids are either absent, or present in inadequate amounts in commercial formula products.[4]

Breastfeeding has been linked to the reduction of long-term obesity. Studies indicate that infants breastfed for more than three months have a 40-50% reduced risk of long-term obesity.[5] This finding is significant, since the rates of obesity amongst children and adolescents in Canada have nearly tripled over the last two decades.[6]

Breast milk contains antibodies that help prevent illness and infections.[7] Such immunological benefits are not found in artificial formula products. While breast milk is know to be relatively low in vitamin D (4 to 40 IU per liter) mothers should nonetheless be encouraged to breastfeed while supplementing their babies with vitamin D. In Canada, it is recommended that all healthy infants receive a daily vitamin D supplementation of 400 IU from birth until the infant's diet includes 400 IU per day of vitamin D.[7]

Recent reports suggest that breastfeeding may be correlated with higher intelligence. One study discovered a positive correlation between the levels of polyunsaturated fatty acids and intelligence.[8] While different clinical studies have shown that breast-fed children score higher on tests of cognitive function than do formula-fed children, some researchers have suggested that the higher test scores may simply be due to cofactors such as socioeconomic status or education of the parents.[9] However, a recent study of preschool children showed that even after adjustment of these cofactors, breastfed children had higher scores for cognitive development than their formula fed counterparts.[10]

Breastfeeding may be protective against the development of Type 2 diabetes. Several studies relate breastfeeding to a lower risk of developing Type 2 diabetes compared with those fed artificial feeds.[11-17] Pettitt et al were the first to examine the association between infant feeding practices and Type 2 diabetes.[14] The study was conducted on a high-risk population, the Pima Indians of Arizona. Findings indicate that those who had been exclusively breastfed had

significantly lower rates of Type 2 diabetes than those exclusively bottle-fed. Type 2 diabetes was 58% less common in the exclusively breastfed sample. A more recent article, which examined prenatal and early infancy risk factors for Type 2 diabetes in Native American children found that breastfeeding may have protective effects.[17] Breastfeeding for one year or longer was a significant independent predictor of future diabetes as was breastfeeding for six months or longer. Other studies looked at blood glucose and serum insulin concentrations in infants.[18-20] These studies relate breastfeeding to lower concentrations of blood glucose and serum insulin than in formula-fed infants. As the incidence of Type 2 diabetes continues to increase, research in this area is becoming increasingly important.

Breastfeeding Promotion, Support and Protection

Implementation of the Baby-Friendly Initiative (BFI) has demonstrated increased breastfeeding initiation and duration rates.[21] The Baby-Friendly Initiative was launched in 1991 by the World Health Organization and UNICEF. The BFI goal is to ensure that all maternities become breastfeeding support centers. A facility is 'baby-friendly' when it does not accept free/low-cost breast milk substitutes, feeding bottles and it implements 10 steps to support breastfeeding[21] (see Table 1):

Table 1. The 10 Steps for the Baby-Friendly Initiative

1. Have a written breastfeeding policy routinely communicated to all health-care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half-hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk unless medically indicated.
7. Practice rooming-in—allow mothers and infants to remain together—24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats (feeding bottles) or pacifiers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

There are approximately 19,600 designated baby-friendly facilities in 152 countries.[21] Of these, 16 are in Canada (12 in Quebec and four in Ontario); seven are hospitals and birthing centers, and nine are community health facilities. Since the process of achieving a Baby-Friendly designation takes several years, this is an important achievement and an improvement for Canada.[22] In 2004, there were only two designated BFI facilities in Canada.

The baby friendly initiative has proven to be successful. For example, in Cuba, since the establishment of 49 baby friendly hospitals and maternity facilities, the rate of exclusive breastfeeding at four months nearly tripled in six years—from 25 per cent in 1990 to 72 per cent in 1996.[23] There is on-going interest in the Northwest Territories, such as at Stanton Territorial Hospital, to work towards the 10 steps to becoming a baby friendly hospital.[24]

Other activities, such as World Breastfeeding Week (WBW), celebrate and encourage breastfeeding. The goal of the WBW is to save one million babies through policies that allow mothers to initiate breastfeeding in the first hour of theirs baby's life.[25] In order to celebrate this event, an annual competition is held to see which location has the most breastfeeding mothers 'latch-on" at the same place, time and day.[25] In North America, the 2007 Breastfeeding Challenge attracts more participation. In 2007, there were 5,374 participants, 225 sites and 34 regions that took part.[26] The number of participants has increased within the past 6 years—from 856 in 2001 to 5,374 participants in 2007.[26] The NWT placed second, after the Yukon, in the 2007 challenge in Category C (less 10,000 births per year). In the NWT, there were a total of 671 births between January to December of 2006.[27]

In Yellowknife, the 2007 World Breastfeeding Week celebration took place on September 29, 2007; 31 moms and 32 babies took part in the event. Events were also held in Fort Smith and Inuvik.[28]

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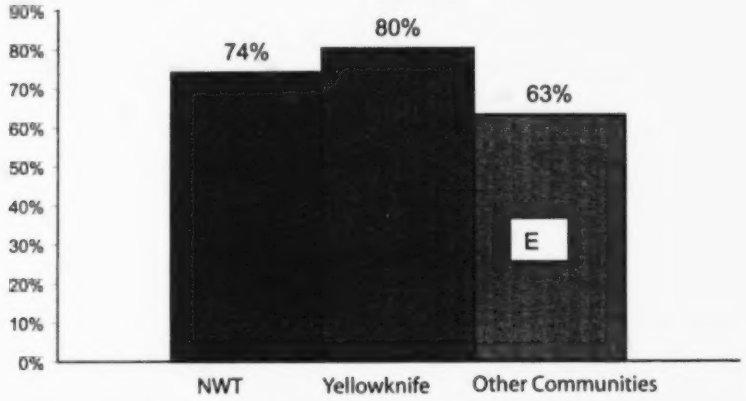
Breastfeeding Rates

According to the most recent breastfeeding information, nearly half (47%) of NWT mothers reported breastfeeding exclusively for at least four months.[29] The breastfeeding initiation rate in the NWT was 74% (see Figure 1), lower than the national average (85%).[29]

Figure 1: Breastfed or Tried to Breastfeed by Community type.
Women who gave birth in last five years. NWT 2003



Source: Statistics Canada, 2003 CCHS Share File
E: Hight sampling variability, interpret with caution.

Preliminary data from the 2003-2005 NWT Breastfeeding and Infant Nutrition Survey have been compiled, however results have yet to be analyzed. A total of 447 women between the ages of 14-44 were surveyed. Eighteen out of 33 communities in the NWT returned surveys for analysis.

Results from the NWT Breastfeeding Survey for Health Professionals and Allied Community Workers 2003-2004 and 2004-2005 and the NWT Breastfeeding Survey for Hospital Health Care Professionals 2004-2005 have also been compiled and are ready for analysis. A total of 70 surveys were completed by health and social services members in various communities throughout the NWT.

Conclusion

The benefits of breastfeeding are not limited to the information presented in this article. Breastfeeding is an important key indicator to population health and needs to be promoted and supported at all levels. New information is continually being published. Selected papers, references and website links are listed in the reference section of this article for further information. Findings of the NWT survey will be reported as soon as the information is available.

Acknowledgments

Elsie De Roose, a member of the Breastfeeding Committee of Canada (BCC), Department of Health and Social Services and Susan Chatwood, Arctic Health Research Network, are acknowledged for their input.

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The Child Development Team (CDT) is a multidisciplinary team consisting of Audiologists, Occupational Therapists, Pediatricians, Physiotherapists, Speech-Language Pathologists and a clinical coordinator. The team's vision is to work in partnership with Northern communities and families to optimize child development and wellness. The CDT works within an integrated service delivery model to provide a coordinated and comprehensive service.

The CDT provides initial diagnostic assessment and follow-up services for children from birth to 16 years of age with complex developmental needs and their families.

Diagnostic assessment clinics will include individual assessment, family conferencing, goal setting and linkages to the child's home community. Follow up clinics for children will be provided with the purpose of reviewing team goals and the development of treatment plans. Clinics will occur approximately once a month.

Ongoing therapeutic intervention with children, their families and community team members such as schools and early childhood programs is the main work of the team.

The CDT receives referrals from physicians, community health nurses and rehabilitation professionals within the Northwest Territories and the Kitikmeot region of Nunavut. Referrals are accepted for children with complex developmental needs that require a combination of at least two rehabilitation disciplines in addition to pediatric medicine. Referrals will be prioritized for complexity of medical/developmental situation, age and length of time on the waitlist. Referrals will be accepted starting February 2008.

The primary role of the CDT coordinator is to coordinate team referrals, direct the delivery of treatment services to the child and family and to act as a resource for patients, family, health care professionals and/or community members.

For further information, please contact Barb Beaton, CDT Coordinator, Stanton Territorial Health Authority at (867) 669-3102.

NOTIFIABLE Diseases

CUMULATIVE TOTALS for the Northwest Territories (NWT) January - December 2007[a]

		January-December 2006	January-December 2007
		NWT	NWT
Vaccine Preventable Diseases	Hepatitis B	0	0
	Haemophilus Influenza	3	1
	Influenza A	19	13
	Influenza B	14	0
	Pertussis	2	0
	Chicken Pox	24	11
Sexually Transmitted/ Bloodborne Diseases	Chlamydia	700	559
	Gonorrhea	180	171
	Hepatitis C	21	17
	Hepatitis, Other	0	0
	Syphilis	0	0
Diseases by Direct Contact/ Respiratory Route	Invasive Group A Strep	5	7
	Invasive Group B Strep in neonates	0	0
	Invasive Group B Streptococcus	2	0
	Invasive Pneumococcal Disease	12	15
	Legionellosis	0	0
	Listeriosis	0	0
	Meningitis/Other Bacterial	0	0
	Meningitis/Unspecified	0	1
	Meningitis/Viral	0	1
	Meningococcal Infections	1	1
	Respiratory Syncytial Virus	13	117
	Tuberculosis	6	9
Enteric, Food and Waterborne Diseases	Botulism	0	0
	Campylobacteriosis	9	7
	Cryptosporidiosis	0	0
	E.Coli 0157:H7	0	2
	Giardiasis	8	3
	Hepatitis A	0	0
	Salmonellosis	9	12
	Shigellosis	0	0
	Tapeworm	0	0
	Trichinosis	0	0
	Yersinia	0	0
Vectorborne/ Other Zoonotic Diseases	Brucellosis	0	0
	Malaria	0	0
	Rabies Exposure[d]	96	97
Antibiotic resistant microorganisms	Methicillin-resistant Staph. Aureus	14	30
	Vancomycin-resistant Enterococci	1	1

NWT HIV Infections Reported from 1987 to 2007

	Age at Diagnosis								Gender		Risk Category					
Total	0-9	10-14	15-19	20-29	30-39	40-49	50-59	60+	Female	Male	MSM[b]	MSM/ IDU[c]	IDU	Hetero-sexual	Perinatal	Blood Products
35	2	0	0	5	20	6	1	1	8	27	13	1	7	10	2	1

a Statistics are based on currently available data and previous data may be subject to change
b Men who have sex with men (MSM)
c Injection Drug User (IDU)
d Late case reporting

Updated December 13, 2007
Health Protection Unit

What's New

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